# **Performative Power**

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content that they create.

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Content Recommender System





Content creators adapt the content that they create.

#### **Example**: content creators "game" Youtube's algorithm

How Does the YouTube Algorithm Work? A Guide to Getting More Views

one: find out what's new with the YouTube algorithm and how it evaluates your content.



#### YouTube SEO 101: Get started optimizing video

In this comprehensive guide to YouTube SEO, columnist Stephan Spencer explains the fundamentals of YouTube optimization and explains how to increase visibility and rankings for your videos.



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Our contribution: formalize and quantify the power of a digital platform to induce changes on participants

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Maximum over platform actions

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**Performative power** :=  $\sup_{f \in F} (1 / |U|) \sum_{u \in U} E[dist(z(u), z_f(u))]$ 

Average treatment effect over population

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Performative power :=  $\sup_{f \in F} (1 / |U|) \sum_{u \in U} \mathbb{E}[\operatorname{dist}(z(u), z_f(u))]$ 

Performative power is a causal, statistical measure of ability to induce change on participants.

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Performative power is a causal, statistical measure of ability to induce change on participants.

Definition does not require knowledge of the specifics of user utility or firm objective.

## Our analysis of performative power

- **1.** Performative power in concrete instantations.
- Strategic adaptation by creators: we show that market factors (*outside options* & *competition*) can reduce performative power.
- Consumption patterns of viewers: we propose a causal design for measuring performative power and show how to repurpose existing causal effects.

## **Our analysis of performative power**

- **1**. Performative power in concrete instantations.
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- 2. How can a firm leverage performative power in optimization?
  - We distinguish between learning and steering—two optimization levers.
  - A firm's gain from steering is bounded by its performative power.

## **Summary of our contributions**

1. We propose performative power: an observable measure of a firm's ability to induce changes on market participants. It is a *causal*, *statistical* notion.

2. We analyze performative power in two concrete instantions: strategic adaptation by content creators and consumption patterns of viewers.

3. We investigate the impact of performative power on optimization: whether a firm benefits from steering is tied to its performative power.